

IN THE CLAIMS:

Please amend Claims 1-17, as indicated below. The following is a complete listing of claims and replaces all prior versions and listings of claims in the present application:

1. (Currently Amended) A method of automatically fabricating a dental superstructure to be attached to an implant ~~with the help of~~ using a digital model description of ~~[[the]]~~ a shape of the dental superstructure, the dental superstructure ~~comprising~~ including first and second elements, the method comprising ~~the following steps:~~

recording a real clinical situation or a shaped clinical situation of the implant as digital data;

analyzing the recorded situation and determining an implant axis and an insertion axis;

computing an optimum shape of the dental superstructure based at least in part on the determined implant axis;

generating digital data representing the optimum shape of the dental superstructure;

automatically separating the digital data representing the optimum shape of the dental superstructure into first digital data representing a shape of the first element to be connected to the implant and second digital data representing a shape of the second element to be connected to the first element, the shape of the first element being optimized, at least in part, based on a tilt angle between the determined implant axis and the determined insertion axis; and

fabricating the first and second elements from one or more blanks, based on the first digital data and the second digital data, using ~~with the aid of~~ machining equipment.

2. (Currently Amended) [[A]] The method as defined in claim 1, further comprising determining a mating surface between the first ~~digital data~~ element and the second element ~~digital data~~.

3. (Currently Amended) [[A]] The method as defined in claim 1, wherein the shape of that first element of the dental superstructure ~~which is~~ to be connected to the implant is described by at least two of the following parameters: a shoulder width, [[a]] the tilt angle ~~of the dental superstructure relative to the determined implant axis~~, an angle of rotation of the dental superstructure about a longitudinal axis of a blank, and a height of a post.

4. (Currently Amended) [[A]] The method as defined in claim 1, wherein one of the first and second elements of the dental superstructure is an abutment and the shape of [[an]] the abutment is optimized with reference to one or more or all the following parameters:

a minimum value for a shoulder width;

a maximum height of a post delimited by [[a]] the tilt angle ~~of the dental superstructure relative to the determined implant axis~~, a geometry of a blank, and a height of an occlusal surface, the maximum height of the post being such that [[it]] the post is disposed at a maximum distance below the height of the occlusal surface;

a minimum height of the post delimited by the position of [[the]] a head of an occlusal screw;

an angle of rotation of the abutment about the longitudinal axis in said blank, ~~which is~~ the angle of rotation being given by ~~[[the]]~~ a relative position of said implant in the recorded clinical situation.

5. (Currently Amended) ~~[[A]]~~ The method as defined in claim 1, wherein ~~[[the]]~~ a shape of a blank and the shape of the dental superstructure are described in ~~[[the]]~~ a coordinate system of ~~[[the]]~~ a geometry for attachment to said implant.

6. (Currently Amended) ~~[[A]]~~ The method as defined in claim 1, further comprising interactively determining the ~~axis of the implant~~ axis by a user.

7. (Currently Amended) ~~[[A]]~~ The method as defined in claim 1, wherein the first element of the dental superstructure is an abutment and the second element of the dental superstructure is a crown.

8. (Currently Amended) ~~[[A]]~~ The method as defined in claim 1, wherein the first element of the dental superstructure is an abutment and the second element of the dental superstructure is a cap.

9. (Currently Amended) ~~[[A]]~~ The method as defined in claim 1, wherein the first element of the dental superstructure is an abutment and the second element of the dental superstructure is a reduced crown.

10. (Currently Amended) [[A]] The method as defined in claim 1, wherein the dental superstructure ~~comprises a~~ includes the first element in [[the]] a form of an abutment, [[a]] the second element in [[the]] a form of a partially veneered crown, and a third element in [[the]] a form of a veneer, and wherein the method further comprises ~~comprising the steps of~~ determining a mating surface between the first and second elements and determining a mating surface between the third element and the first element and/or the second element.

11. (Currently Amended) [[A]] The method as defined in claim 1, wherein the dental superstructure ~~comprises~~ includes a number of abutments ~~which are~~ interconnected by a common frame construction.

12. (Currently Amended) [[A]] The method as defined in claim 1, wherein distribution rules can be varied by [[the]] a user.

13. (Currently Amended) [[A]] The method as defined in claim 1, wherein ~~that~~ the first element of the dental superstructure ~~which is to be~~ connected to the implant is computed in [[its]] a final size of the first element and the second element of the dental superstructure to be connected to [[this]] the first element is computed as a provisional superstructure having exterior dimensions ~~which are~~ smaller than [[the]] final exterior dimensions of the dental superstructure while retaining [[the]] a mating surface between the first and second elements.

14. (Currently Amended) [[A]] The method as defined in claim 13, wherein  
[[the]] a same data set is used to compute [[said]] the first element of the dental superstructure  
~~with its~~ and final dimensions of the provisional superstructure.

15. (Currently Amended) A method of automatically fabricating a dental  
superstructure to be attached to an implant ~~with the help of~~ using a digital model description of  
[[the]] a shape of the dental superstructure, the dental superstructure ~~comprising~~ including first  
and second elements, the method comprising ~~the following steps~~:

recording a real clinical situation or a shaped clinical situation of the implant as  
digital data;

analyzing the recorded situation and determining an implant axis and an insertion  
axis;

computing an optimum shape of the dental superstructure based at least in part on  
the determined implant axis;

generating digital data representing the optimum shape of the dental  
superstructure;

automatically separating the digital data representing the optimum shape of the  
dental superstructure into first digital data representing a shape of the first element to be  
connected to the implant and second digital data representing a shape of the second element to be  
connected to the first element, the shape of the first element being optimized, at least in part,  
based on a tilt angle between the determined implant axis and the determined insertion axis; and

transmitting the first digital data and the second digital data to machining equipment ~~for fabrication of that fabricates~~ the first and second elements from one or more blanks.

16. (Currently Amended) [[A]] The method as defined in claim 15, further comprising determining a mating surface between the first ~~digital data~~ element and the second ~~digital data~~ element.

17. (Currently Amended) [[A]] The method as defined in claim 15, wherein the first element of the dental superstructure is an abutment.

18. (Withdrawn) A system for fabricating a dental superstructure to be attached to an implant with the help of a digital model description of the shape, the dental superstructure comprising first and second elements, the system comprising:

means for recording a real clinical situation or a shaped clinical situation of the implant as digital data;

means for analyzing the recorded situation and determining an implant axis;

means for computing an optimum shape of the dental superstructure based at least in part on the determined implant axis;

means for automatically separating the computed optimum shape of the dental superstructure into first digital data and second digital data; and

means for fabricating the first and second elements from one or more blanks on the basis of the first digital data and the second digital data with the aid of machining equipment.

19. (Withdrawn) A system as defined in claim 18, comprising means for determining a mating surface between the first digital data and the second digital data.

20. (Withdrawn) A system as defined in claim 18, wherein the first element of the dental superstructure is an abutment.